

CLAIMS

1           1.     A wireless communication network adapted for use in an automated  
2 monitoring system for monitoring and controlling a plurality of remote devices via a  
3 host computer connected to a wide area network, the wireless communication network  
4 comprising:

5           a plurality of wireless transceivers having unique identifiers, each of the  
6 plurality of wireless transceivers configured to receive a sensor data signal from one of  
7 the plurality of remote devices and transmit an original data message using a predefined  
8 wireless communication protocol, the original data message comprising the  
9 corresponding unique identifier and sensor data signal, and further configured to receive  
10 the original data message transmitted by one of the other wireless transceivers and  
11 transmit a repeated data message using the predefined communication protocol, the  
12 repeated data message including the sensor data signal and the corresponding unique  
13 identifier; and

14           a site controller in communication with at least one of the plurality wireless  
15 transceivers, the site controller configured to receive the original data messages and the  
16 repeated data messages, identify the remote device associated with the corresponding  
17 sensor data signal, and provide information related to the sensor data signal to the wide  
18 area network for delivery to the host computer.

1           2.     The wireless communication network of claim 1, further comprising a  
2 plurality of repeaters having unique identifiers, each of the plurality of repeaters in  
3 communication with at least one of the plurality of wireless transceivers and configured  
4 to receive the original data message transmitted by the at least one of the plurality of  
5 wireless transceivers and transmit a repeated data message using the predefined  
6 communication protocol, the repeated data message including the sensor data signal  
7 from the original data message and the unique identifier corresponding to the repeater.

1           3.     The wireless communication network of claim 1, wherein the site  
2 controller is further configured to provide a command message to one of the plurality of  
3 wireless transceivers and each of the plurality of wireless transceivers are further  
4 configured to transmit, in response to the command message, the original data message,  
5 wherein the original data message corresponds to the command message.

1           4.     The wireless communication network of claim 1, wherein the predefined  
2 communication protocol comprises a data packet comprising:  
3           a receiver address identifying the receiver of the data packet;  
4           a sender address identifying the sender of the data packet; and  
5           a command indicator specifying a predefined command code.

1           5.     The wireless communication network of claim 1, wherein the plurality  
2 of wireless transceivers are further configured to receive signals via Bluetooth  
3 technology.

1           6.     The wireless communication network of claim 1, wherein the plurality  
2 of wireless transceivers are further configured to receive signals via IEEE standard  
3 802.11(b).

1           7.     The wireless communication network of claim 4, wherein the data  
2 packet further comprises:  
3           a packet length indicator which indicates a total number of bytes in the current  
4 packet;  
5           a total packet indicator which indicates the total number of packets in the  
6 current message; and  
7           a current packet indicator which identifies the current packet; and  
8           a message number identifying the current message.

1           8.     A wireless communication network adapted for use in an automated  
2 monitoring system for monitoring and controlling a plurality of remote devices via a  
3 host computer connected to a wide area network, the wireless communication network  
4 comprising:

5           a plurality of wireless communication means having unique identifiers, each of  
6 the plurality of wireless communication means configured to receive a sensor data  
7 signal from one of the plurality of remote devices and transmit an original data message  
8 using a predefined wireless communication protocol, the original data message  
9 comprising the corresponding unique identifier and sensor data signal, and further  
10 configured to receive the original data message transmitted by one of the other wireless  
11 transceivers and transmit a repeated data message using the predefined communication  
12 protocol, the repeated data message including the sensor data signal and the  
13 corresponding unique identifier;

14           a means for receiving each of the original data messages and the repeated data  
15 messages;

16           a means for identifying, for each received message, the remote device associated  
17 with the corresponding sensor data signal; and

18           a means for providing information related to the sensor data signal to the wide  
19 area network for delivery to the host computer.

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1           10.    The wireless communication network of claim 8, further comprising a  
2 means for providing a command message to one of the plurality of wireless  
3 communication means, wherein each of the wireless communication means further  
4 comprise a means for transmitting, in response to the command message, the original  
5 data message, wherein the original data message corresponds to the command message.

1           11.    The wireless communication network of claim 8, wherein the predefined  
2 communication protocol comprises a data packet comprising:  
3           a means for identifying the receiver of the data packet;  
4           a means for identifying the sender of the data packet; and  
5           a command means for specifying a predefined command code.

1           12.    The wireless communication network of claim 11, wherein the data  
2 packet further comprises:  
3           a means for indicating a total number of bytes in the current packet;  
4           a means for indicating the total number of packets in the current message;  
5           a means for identifying the current packet; and  
6           a means for identifying the current message.

1 13. A wireless communication network for monitoring and controlling a  
2 plurality of remote devices via a host computer connected to a wide area network, the  
3 wireless communication network comprising:

4 a plurality of wireless transceivers having unique identifiers, each of the  
5 plurality of wireless transceivers configured to receive a sensor data signal from one of  
6 the plurality of remote devices and transmit an original data message using a predefined  
7 wireless communication protocol, the original data message comprising the  
8 corresponding unique identifier and sensor data signal, and further configured to receive  
9 the original data message transmitted by one of the other wireless transceivers and  
10 transmit a repeated data message using the predefined communication protocol, the  
11 repeated data message including the sensor data signal and the corresponding unique  
12 identifier;

13 wherein at least one of the plurality of wireless transceivers is further configured  
14 to provide the original data messages and the repeated data messages to a site controller  
15 connected to the wide area network.

1 14. The wireless communication network of claim 13, further comprising a  
2 plurality of repeaters having unique identifiers, each of the plurality of repeaters in  
3 communication with at least one of the plurality of wireless transceivers and configured  
4 to receive the original data message transmitted by the at least one of the plurality of  
5 wireless transceivers and transmit a repeated data message using the predefined  
6 communication protocol, the repeated data message including the sensor data signal  
7 from the original data message and the unique identifier corresponding to the repeater.

1 15. The wireless communication network of claim 13, wherein the at least  
2 one of the plurality of wireless transceivers is further configured to receive a command  
3 message for one of the plurality of wireless transceivers from the site controller and  
4 transmit the command message to the one of the plurality of wireless transceivers.

1           16. The wireless communication network of claim 13, wherein the  
2 predefined communication protocol comprises a data packet comprising:

3           a receiver address identifying the receiver of the data packet;

4           a sender address identifying the sender of the data packet; and

5           a command indicator specifying a predefined command code.

1           17. The wireless communication network of claim 13, wherein the plurality  
2 of wireless transceivers are further configured to receive signals via Bluetooth  
3 technology.

1           18. The wireless communication network of claim 13, wherein the plurality  
2 of wireless transceivers are further configured to receive signals via IEEE standard  
3 802.11(b).

1           19. The wireless communication network of claim 16, wherein the data  
2 packet further comprises:

3           a packet length indicator which indicates a total number of bytes in the current  
4 packet;

5           a total packet indicator which indicates the total number of packets in the  
6 current message; and

7           a current packet indicator which identifies the current packet; and

8           a message number identifying the current message.

1           20. A wireless communication network for monitoring and controlling a  
2 plurality of remote devices via a host computer connected to a wide area network, the  
3 wireless communication network comprising:

4           a plurality of wireless transceivers having unique identifiers, each of the  
5 plurality of wireless transceivers configured to receive a sensor data signal from one of  
6 the plurality of remote devices and transmit an original data message using a predefined  
7 wireless communication protocol, the original data message comprising the  
8 corresponding unique identifier and sensor data signal, and further configured to receive  
9 the original data message transmitted by one of the other wireless transceivers and  
10 transmit a repeated data message using the predefined communication protocol, the  
11 repeated data message including the sensor data signal and the corresponding unique  
12 identifier;

13           wherein at least one of the plurality of wireless transceivers is further configured  
14 to provide the original data messages and the repeated data messages to a primary  
15 wireless communication network associated with an automated monitoring system.

1           21. The wireless communication network of claim 20, further comprising a  
2 plurality of repeaters having unique identifiers, each of the plurality of repeaters in  
3 communication with at least one of the plurality of wireless transceivers and configured  
4 to receive the original data message transmitted by the at least one of the plurality of  
5 wireless transceivers and transmit a repeated data message using the predefined  
6 communication protocol, the repeated data message including the sensor data signal  
7 from the original data message and the unique identifier corresponding to the repeater.

1           22. The wireless communication network of claim 20, wherein the at least  
2 one of the plurality of wireless transceivers is further configured to receive a command  
3 message for one of the plurality of wireless transceivers from the primary wireless  
4 communication network and transmit the command message to the one of the plurality  
5 of wireless transceivers.

1           23. The wireless communication network of claim 20, wherein the  
2 predefined communication protocol comprises a data packet comprising:

- 3           a receiver address identifying the receiver of the data packet;  
4           a sender address identifying the sender of the data packet; and  
5           a command indicator specifying a predefined command code.

1           24. The wireless communication network of claim 20, wherein the plurality  
2 of wireless transceivers are further configured to receive signals via Bluetooth  
3 technology.

1           25. The wireless communication network of claim 20, wherein the plurality  
2 of wireless transceivers are further configured to receive signals via IEEE standard  
3 802.11(b).

1           26. The wireless communication network of claim 23, wherein the data  
2 packet further comprises:

- 3           a packet length indicator which indicates a total number of bytes in the current  
4 packet;  
5           a total packet indicator which indicates the total number of packets in the  
6 current message; and  
7           a current packet indicator which identifies the current packet; and  
8           a message number identifying the current message.